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Reply to final office action of August 19, 2008   Docket: CU-4232

Remarks and Arguments

Reconsideration is respectfully requested.

Claims 1-14 are pending in the present application before this amendment. By the present amendment claims 1, 3, 5-6, 8, and 10 have been <u>amended</u>. Claims 15-16 have been <u>added</u>. No new matter has been added.

In the office action (page 2), claim 10 stands objected to as containing a typographical error.

As suggested by the examiner, "finalized telecomman plan" in claim 10 has been corrected to --finalized **telecommand** plan--. Withdrawal of the objection is respectfully requested.

In the office action (page 2), claims 1, 2 and 8-10 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,963,166 (Kamel) in view of U.S. Patent No. 6,608,589 (Devereux) and Posner ("Lessons learned from the design and development of the satellite control center (SCC) for the far ultraviolet spectroscopic explorer (FUSE) mission"; _Spaceops 98_; Paper ID 1b005; June 7, 1998). The "et al." suffix is omitted in a reference name.

The applicants respectfully disagree and submit that the claims, as they now stand, are in condition for allowance.

The examiner's attention is respectfully directed to the newly added limitations, found in claims 1, 6 and 8, that require

<u>--a first user interface for applying a mapping rule in accordance to
a satellite task name and a parameter condition; and
--a second user interface for selecting desired commands from a</u>

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<u>list of available commands to define a relative time command sequence in
the satellite task schedule</u>–.

Support is found in specification page 11, lines 1 to page 12 , line 2 and FIGS. 4-5 of

the present application.

Kamel is unlike the presently claimed invention. Kamel at most teaches an

image navigation and registration system that includes a ground segment and a

spacecraft segment. Kamel discloses that the ground segment includes (1) an orbit and

attitude tracking systems (OATS) 56; (2) a GOES telemetry and command system

(GTACS) 55; (3) a product monitor (PM) 59; and (4) an auxiliary ranging system (ARS).

(See e.g., Kamel col. 7 lines 60 to col. 8 line 5). The on-board computer of Kamel

autonomously performs various housekeeping functions (col. 9 lines 14-21) as well as

performs spacecraft control and motion compensation functions performs (col. 10, lines

13-24) to generate precise camera image motion compensation signals using precise

orbit elements, e.g., attitude and camera synchronization data (col. 12, lines 16-18).

The ground computer 41,42 does generate a schedule of daily camera operations (col.

12, lines 30-32). However, the examiner even admits in the office action at page 8,

lines 2-8 that Kamel

> "... does not specifically disclose a first user interface for establishing the
> mapping rules, and wherein the first user interface comprises: a list
> display for displaying a mapping rule list; an information display for a
> mapping rule name, a task name to which the mapping rule is applied, and
> a relative time command sequence; and a condition display for displaying
> a mapping condition according to a parameter of the task, and the
> mapping condition includes a plurality of logical operation conditions and
> comparison conditions."

Therefore Kamel is unlike the presently claimed invention, because Kamel is silent, inter

alia, with regards to the above noted newly added limitations that are now required in the presently claimed invention.

Devereux at most teaches an autonomous navigation system that implements numerous command, control and telemetry by using various navigation and orbit determination algorithms, such as Kalman filters. The autonomous navigation and time keeping system taught by Devereux provides position, velocity, time, and earth-sun vector data which provides notification of defined orbital events in real-time. Devereux does not even hint at a first user interface for use in applying a mapping rule in accordance to a satellite task name and a parameter condition. Further Devereux also does not even hint at a second user interface for selecting desired commands from a list of available commands to define a relative time command sequence in the satellite task schedule. Therefore, combining Devereux with Kamel does not cure the above noted deficiencies of Kamel in replicating the presently claimed invention.

Posner is also unlike the presently claimed invention. Posner at most discloses an artificial intelligence expert system programmed in a Spacecraft Command Language (SCL) that provides a basis for autonomous space and ground components to control a satellite. Posner discloses that an on-board database and a complimentary version on the ground can be used to provide the current state of each on-board sensor or system and used to provide logical scripts and rules for the control the satellite. Posner does not even hint at a first user interface for use in applying a mapping rule in accordance to a satellite task name and a parameter condition. Further Posner also does not even hint at a second user interface for selecting desired commands from a list of available commands to define a relative time command sequence in the satellite task

schedule.   Therefore, combining Posner with the combination of Kamel and Devereux does not cure the above noted deficiencies of Kamel and Devereux in replicating the presently claimed invention.

To render obvious a claimed invention, the combined prior art references must teach or suggest all of the limitations in a claimed invention. Therefore, Kamel, Devereux and Posner, in whole or in combination, cannot support an obviousness rejection to claims 1, 2 and 8-10. Therefore, the examiner is respectfully requested to withdraw this rejection to claims 1, 2 and 8-10.

In the office action (page 7), claims 3-5 stand rejected under 35 U.S.C. §103(a) as being obvious over Kamel in view of Posner and Haag ("Use of WWW technology for mission control systems"; *ESA Bulletin* **No. 97; March 1999).**

The applicants respectfully disagree and submit that the claims, as they now stand, are in condition for allowance.

The above comments are equally applicable here in that Kamel and Posner, in whole or in combination, do not teach or suggest, inter alia, the above noted limitations now required in claims 1, 6, and 8.

Haag is also unlike the presently claimed invention. Haag at most discloses some analogies between that of mission control systems and that of commercial information (IT) systems. Haag discloses that data from either system can be viewed in display screens. The display screens can correspond to telemetry displays and telecommand histories. Haag also notes that simple personal computers (PC) can be used to provide services to manage accounts in the on-line via the World Wide Web

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(WWW) which require security information to gain 'roles and privileges' access. Finally

Haag discloses that remote access to mission control systems is needed with regards to

(1) supporting spacecraft manufacturer or payload providers, (2) providing payload

providers access to data and ability to control on-board experiments, and (3) these

remote access serves can reduce the cost of operations.

    The applicants respectfully disagree with the examiners assessment of exactly

what Haag does teach. The applicants can find nothing in Haag that mentions or even

hints at a first user interface that comprises (1) a list display for displaying a mapping

rule list; (2) an information display for displaying a mapping rule name, the satellite task

name to which the mapping rule is applied, and the relative time command sequence;

and (3) a condition display for displaying a mapping condition in accordance to the

parameter condition of the satellite task name, and the mapping condition includes a

plurality of logical operation conditions and comparison conditions.   Yet further, the

applicants can find nothing in Haag that suggests a second user interface that has (1) a

list display for displaying the list of available commands; (2) a command display for

displaying the list of available commands that can be added to the relative time

command sequence; and (3) a command sequence display for displaying the selected

commands included in the relative time command sequence; such that the second user

interface is for selecting desired commands and for editing the relative time command

sequence of the command sequence display.

    Nevertheless, the applicants have subsequently added the above noted

limitations into independent claims 1, 6 and 8 to more clearly define the present

invention. Therefore, Haag does not teach or suggest any of these newly added

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limitations required in claims 1, 6 and 8. Thus Haag is unlike the presently claimed

invention. Accordingly, combining Haag with the combination of Kamel and Posner

does not cure the above noted deficiencies of Kamel and Posner in replicating the

presently claimed invention.

Therefore Kamel, Posner, and Haag, in whole or in combination, cannot support

an obviousness rejection to claims 3-5. Therefore, the examiner is respectfully

requested to withdraw this rejection to claims 3-5.

In the office action (page 11), claims 6-7 and 11-15 stand rejected under 35

U.S.C. §103(a) as being obvious over Kamel in view of Devereux, Posner, and U.S.

Patent No. 6,275,677 (Tandler).

The applicants respectfully disagree and submit that the claims, as they now

stand, are in condition for allowance.

The above comments are equally applicable here in that Kamel, Devereux and

Posner, in whole or in combination, do not teach or suggest, inter alia, the above noted

limitations now required in claims 1, 6, and 8.

Tandler is also considerably different than the presently claimed invention.

Tandler discloses a method of reconfiguring satellite communication systems by using

region defining dot products of to define and to identify adjacent geopolitical region in

order to efficiently communicate with ground stations within the particular adjacent

geopolitical region (Tandler col. 2 line 42-54). When the satellite 10 is deemed to be

within a region 14, the computer 20 will execute a predetermined set of commands

stored in the command set storage unit 32 to reconfigure the satellite in accordance to

communication protocols applicable to that particular region 14. Tandler does not even hint at any of the above noted newly added limitations that are now required in the presently claimed invention.
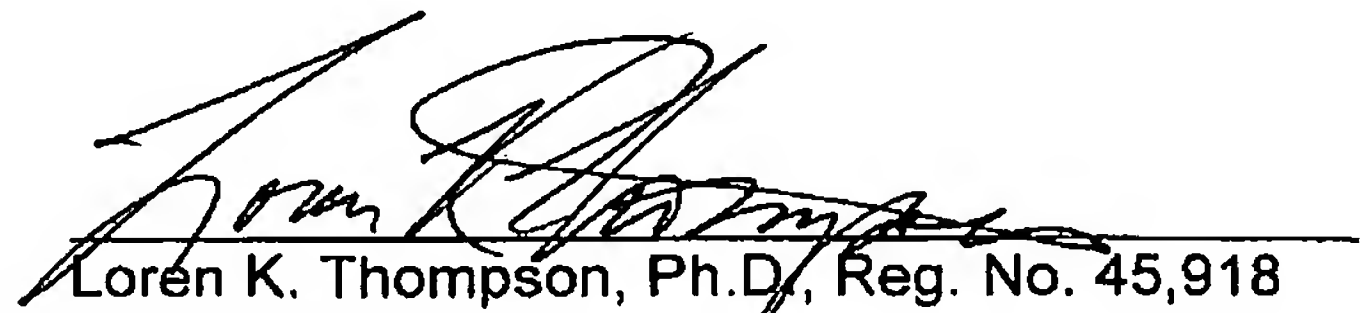
Accordingly, combining Tandler with the combination of Kamel, Deveneux and Posner does not cure the above noted deficiencies of Kamel, Deveneux and Posner in replicating the presently claimed invention. Therefore Kamel, Deveneux, Posner and Tandler, in whole or in combination, cannot support an obviousness rejection to claims 6, 7 and 11-15. Therefore, the examiner is respectfully requested to withdraw this rejection to claims 6, 7 and 11-15.

For the reasons set forth above, the applicants respectfully submit that claims 1-16 pending in this application are in condition for allowance over the cited references. Accordingly, the applicants respectfully request reconsideration and withdrawal of the outstanding rejections and earnestly solicit an indication of allowable subject matter. This amendment is considered to be responsive to all points raised in the office action.

Should the examiner have any remaining questions or concerns, the examiner is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully submitted,

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